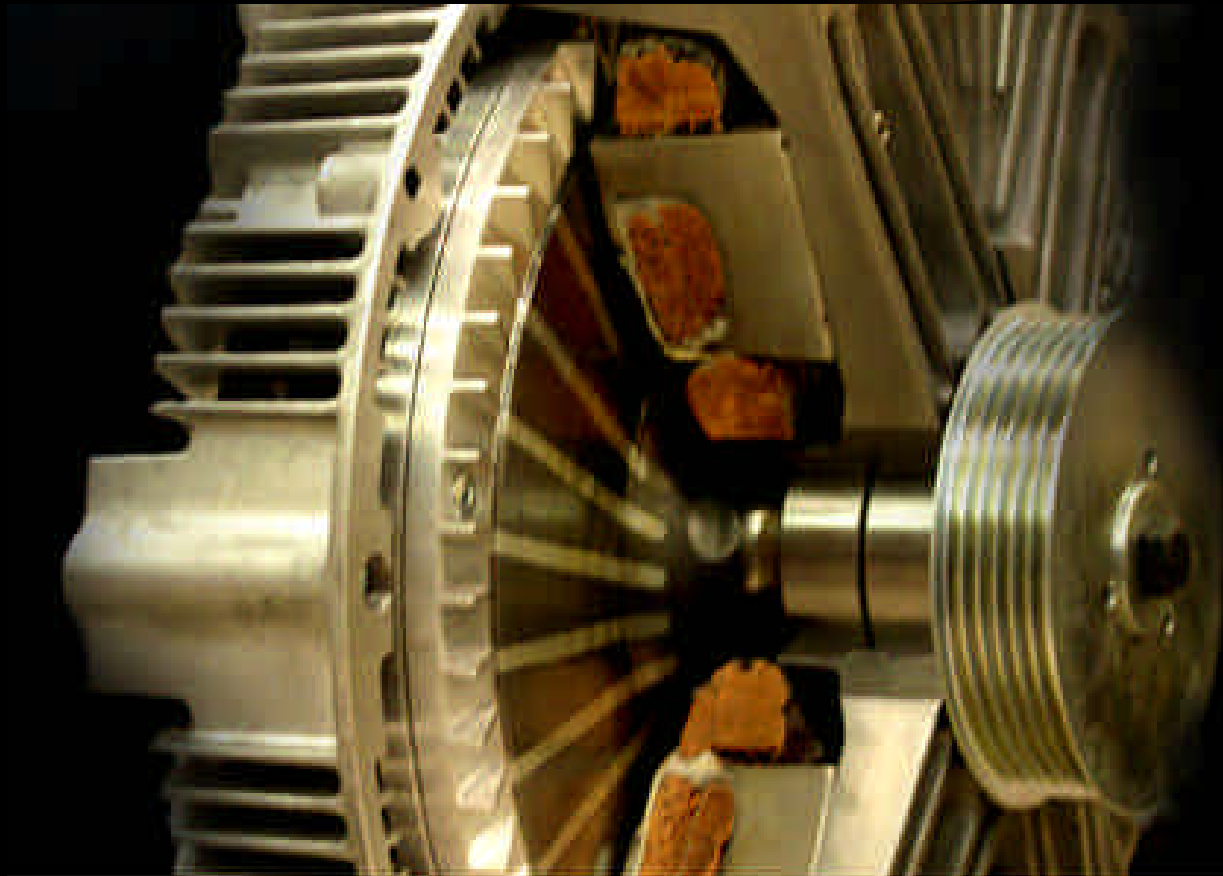


Welcome

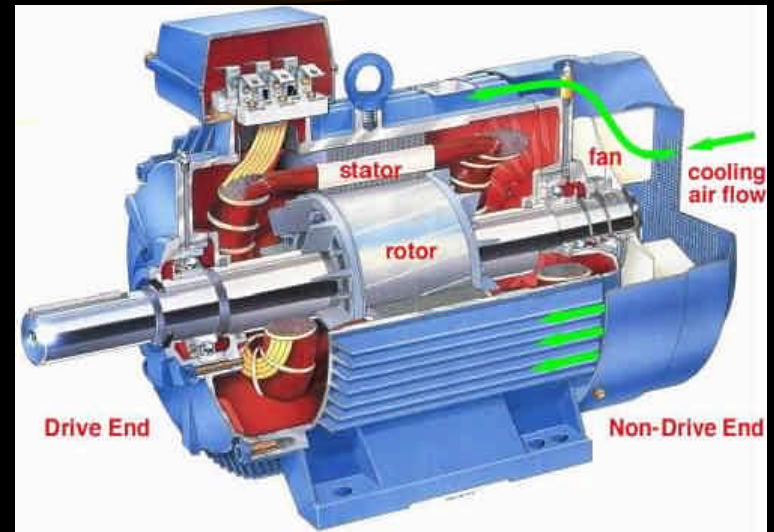
Aura Systems, Inc
Shareholder Meeting
2011



Induction Machines



Tesla's machine



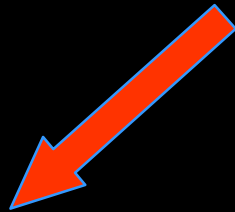
Modern machine

Induction Machine



Induction machines are the workhorse of industry. 90% of all electrical rotating machinery in industry are induction type.

All induction machines have a rotor and a stator.
Two basic forms of induction machines:

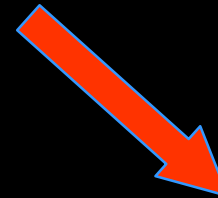


Electric Motors

Input → Electric Energy
Output → Mechanical Work

A rotating magnetic field in the stator generates a torque on the rotor due to an induced magnetic field in the rotor. This causes the shaft to rotate at a speed slightly slower than the rotating magnetic field in the stator.

Positive Slip



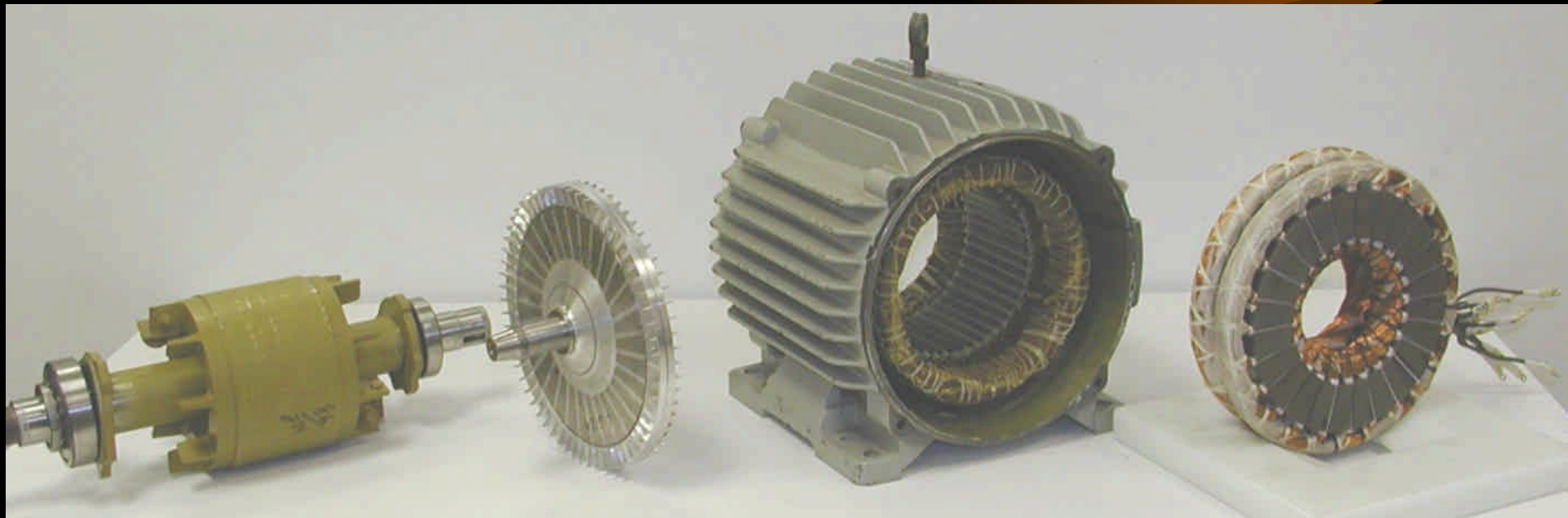
Generators

Input → Mechanical Work
Output → Electric Energy

A rotating rotor with a magnetic field in it typically induces a large current in the stator. The frequency of the field induced in the stator is slightly slower than the rotating shaft.

Negative Slip

AuraGen/VIPER vs. Traditional Induction Motor/Generator



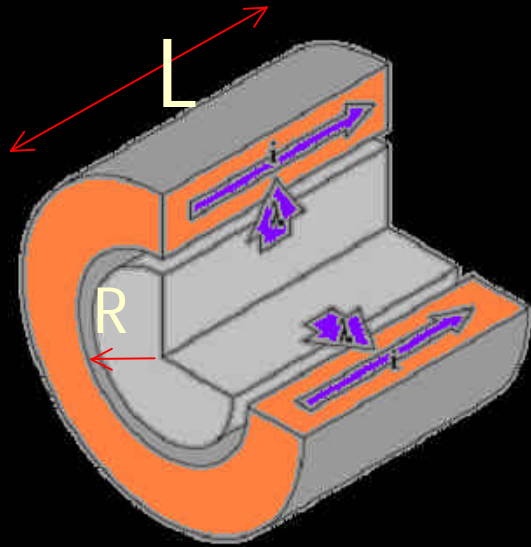
Standard Induction
Motor Rotor

AuraGen
Rotor

Standard Induction
Motor Stator

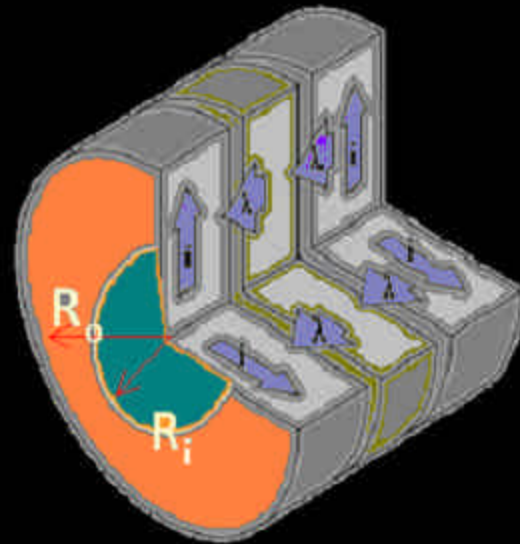
AuraGen
Stator (2)

Radial vs. Axial Configuration



Radial configuration

$$P = Tw = 2pwR^2Lt$$

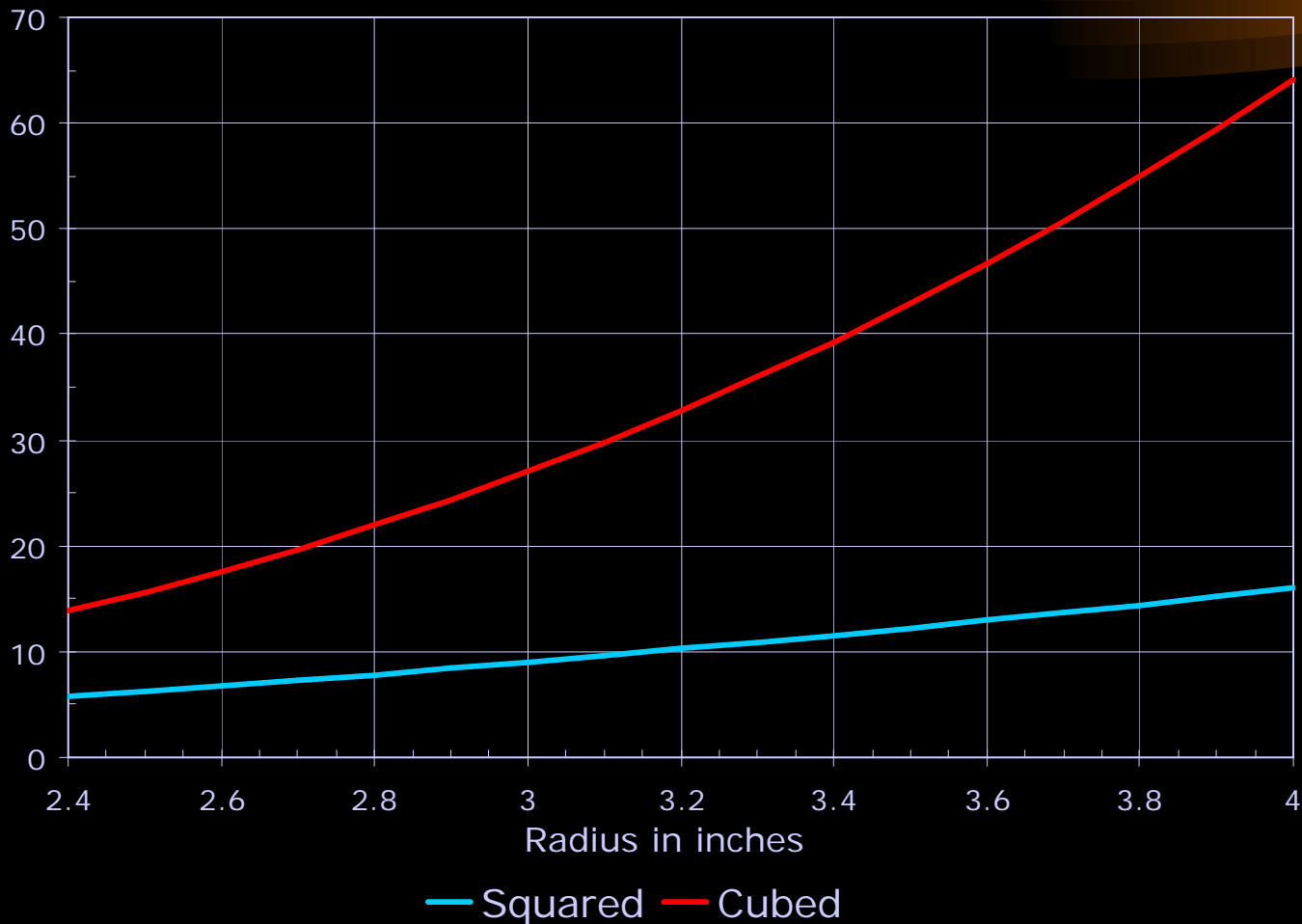


Axial configuration

$$P = Tw = 2pwR_o^3(k_d - k_d^3)t, k_d = \frac{R_i}{R_o}$$

Axial machine are acknowledged to achieve higher torque (energy) density

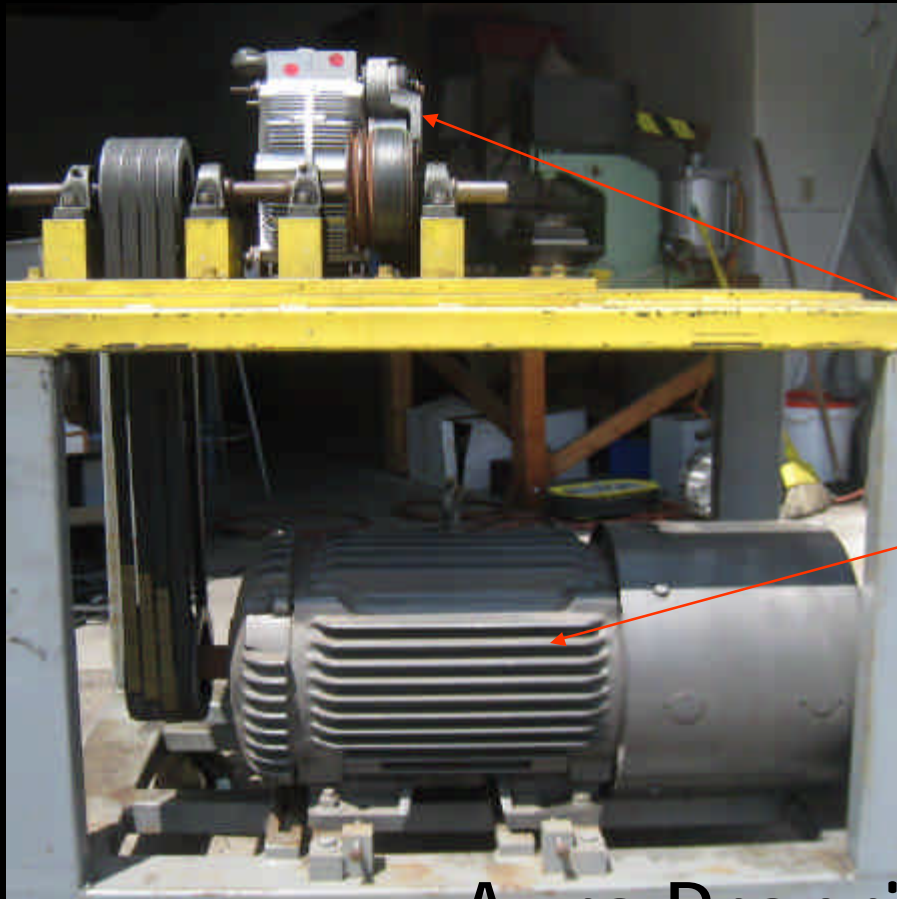
Cubed vs. Squared



Size Matters!

Size = Cost

The Power of AuraGen



The AuraGen
provides output
equal to this large
machine

AuraGen

Why Mobile Power



- Mobile power is a large and growing market as societies around the world increase their dependence on electric tools, digital sensors, electronic instruments, computers, communication equipment, modern military hardware and hybrid /electric vehicles.
- Unlike some technologies that are looking for applications, mobile power users are looking for needed solutions. This results in a well-defined market place.
- Our technology can clearly and unambiguously provide a value proposition to mobile power users at existing market pricing. The proposition is (i) operational cost savings, (ii) meets performance requirements particularly at low rpm, (iii) readily integrated into numerous platforms and (iv) is an environmentally friendly solution.

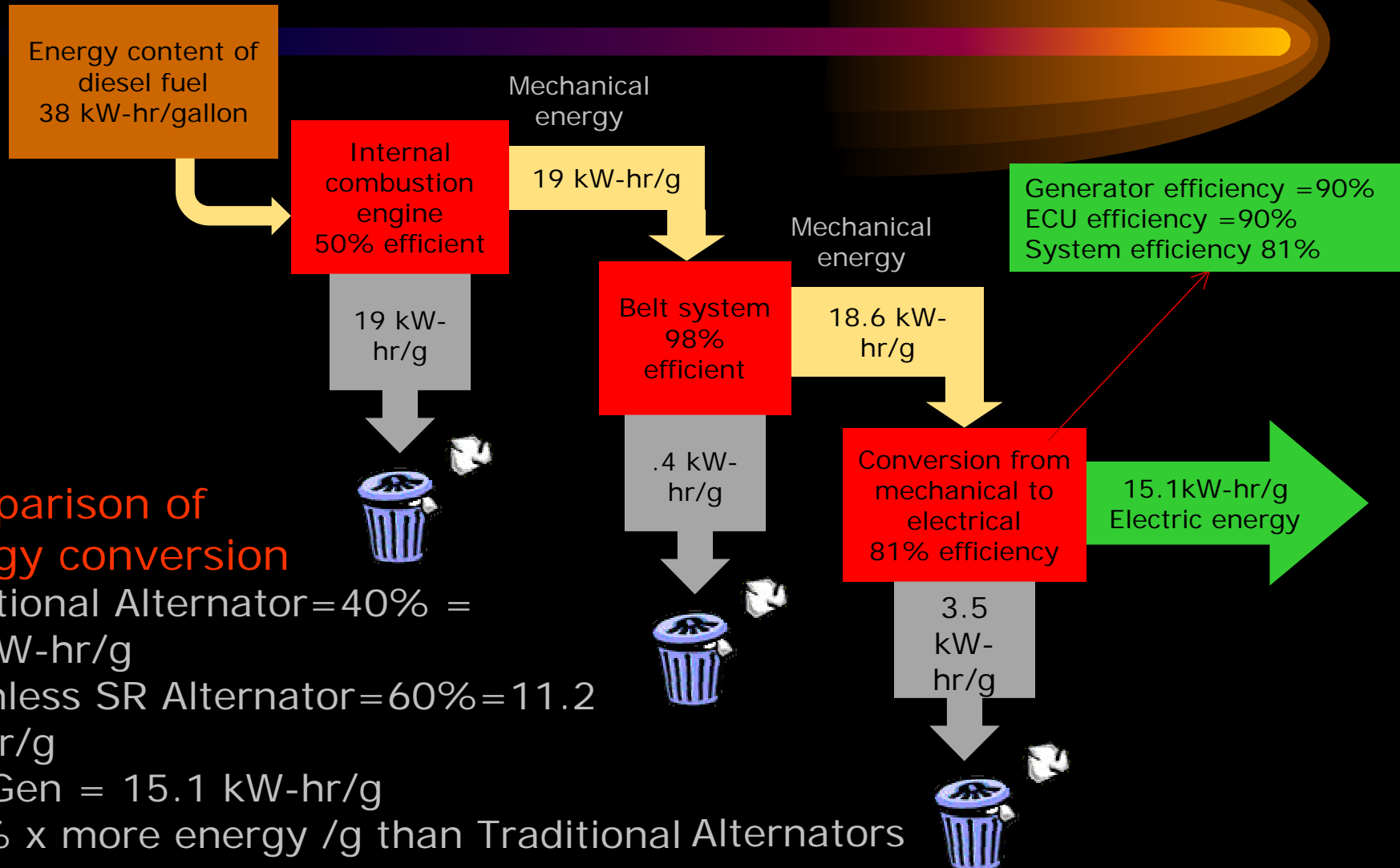
Core Product Line

Power (kW)	2.5	5	10/20	15/30	60/120
Diameter	7.5"	9"	12"	12"	14"
110 VAC/ 60 Hz. Single- ϕ					
220 VAC/60 Hz. Split- ϕ					
230 VAC/50 Hz. Split- ϕ					
220 VAC/60 Hz. 3- ϕ					
240 VAC/50 Hz. Split ϕ					
480 VAC/60 Hz. 3- ϕ					
480 VAC/50 Hz. 3- ϕ					
12 VDC					
24 VDC					
300-400 VDC					
800-1200 VDC					

Product Line Schedule

[illegible]

Energy Conversion Using AuraGen



Sample of Mobile Power Users



Buses
Military
Oil and Gas Services
Food Transport Trucks
Telecommunication vehicles
Utility service and repair vehicles
Ambulances, Police and fire trucks
Municipalities and local government agencies

Market Segments

➤ Military

Driven by demand for exportable power for sensors, computers, communication, fire control etc.

➤ Transport Refrigeration

Driven by high cost of diesel fuel and environmental concerns.

➤ APUs (Stand Alone Generators)

Driven by high cost of fuel environmental concerns and higher power demands found in such areas as cell towers, oil and gas fields, emergency rescue vehicles etc.

➤ Vehicle Electrification

Hybrid and electric vehicles as well as electrification of components such as A/C systems for buses and trucks



Government Customers Using Aura's VIPER



Transport Refrigeration



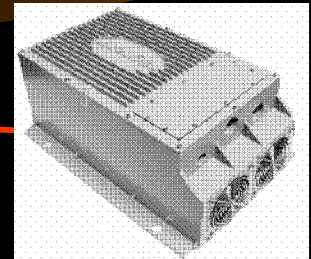
The Old Diesel Way



Aura's All Electric Way

All-Electric Transport Refrigeration

Zanotti Power by AURA EFZ Refrigeration Unit



Electronic Control Unit



AuraGen Generator

Aura Proprietary

Value Analysis



1 Cooling system in BTU/hr.	20000	30000	50000
2 Fuel utilization per hour for Diesel based solution	0.6	0.9	1.5
3 Fuel utilization per hour for all electric solution	0.08	0.12	0.2
4 Annual working hours	2080	2080	3120
5 Hourly scheduled maintenance cost for Diesel	\$ 0.75	\$ 1.13	\$ 1.88
6 Hourly maintenance cost for Electric System	\$ 0.15	\$ 0.23	\$ 0.38
7 Diesel Fuel Cost per gallon	\$ 3.90	\$ 3.90	\$ 3.90
8 Depreciation over life time in years	7	7	7

	Diesel	Electric	Diesel	Electric	Diesel	Electric
System Cost Including Installation	\$ 16,000.00	\$ 22,900.00	\$ 20,000.00	\$ 27,000.00	\$ 28,000.00	\$ 36,000.00
Operational Costs						
Fuel	\$ 4,867.20	\$ 648.96	\$ 7,300.80	\$ 973.44	\$ 18,252.00	\$ 2,433.60
Scheduled maintenance	\$ 1,560.00	\$ 312.00	\$ 2,350.40	\$ 478.40	\$ 5,865.60	\$ 1,185.60
Annual Depreciation (straight line 7 year on cost)	\$ 2,285.71	\$ 3,271.43	\$ 2,857.14	\$ 3,857.14	\$ 4,000.00	\$ 5,142.86
Total Annual Cost	\$ 8,712.91	\$ 4,232.39	\$ 12,508.34	\$ 5,308.98	\$ 28,117.60	\$ 8,762.06
Increased Annual Income		\$ 4,480.53		\$ 7,199.36		\$ 19,355.54

Social Benefits

Emissions Reduction and Compliance

	Diesel TRU System			Electric System		
	NOx	CO	PM	NOx	CO	PM
Truck	936	819	46.8	936	819	46.8
Reefer	255	224	13.6	0	0	0
Total	1,191	1,043	60.4	936	819	46.8

AURA ELECTRIFICATION SYSTEM FOR All Electric Reefer Solution is EXEMPT from Transport Refrigeration Unit (TRU) CARB regulation and would NOT NEED TO REGISTER with CARB in 2010

Rod Hill, CARB

*TRU is a refrigeration system that is powered by a diesel engine that is used in the transport of perishable goods

APUs



Vehicle Electrification































































Mechanical
compressor



Electrical
compressor



The AuraGen vs. Traditional Solutions

	AuraGen	Gensets	High Output Alternators	PM Alternators	Dynamic Inverters	Fuel Cells
Compact size						
Fuel efficiency						
Need for an additional fuel source						
Heat generation						
Service and maintenance costs						
Breadth of industries serviced						
Ease to obtain peak power ⁽³⁾						
Flexibility and efficiency of energy delivery						
Clean / Green rating						
Noise level						

Legend

 Excellent

 High

 Medium

 Low

 Poor